



COMPONENTS FAQ

Q I want to build a media PC and need to buy a graphics card for it. What should I look for?

A The main thing to look for is a dedicated graphics card, as onboard graphics are generally not good enough for video decoding. Any graphics card from a Radeon 9600 upwards should cope well enough. If you want to play games on this PC, you'll need something powerful, such as an nVidia GeForce 6600GT or better; if you don't want to play games, opt for a cheaper card.



▲ A passively cooled graphics card is useful for a PC that is on all day

Next, you should consider the kind of outputs you want. If you're connecting to a normal TV, an S-video output is a must. If you're connecting to an LCD TV, DVI is a good choice, but D-sub or component outputs will do the job and get you the best picture possible, as they also support High Definition (HD) images.

As a media PC is likely to be left running all the time, it's worth looking for a quiet card. You can buy silent nVidia GeForce 6600s and Radeon X1300s, or buy a silent cooling kit for any other card.

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REVIEW POWER SUPPLIES

ANTEC Neo HE500

RATING ★★★★★

PRICE £70 inc VAT

SUPPLIER www.morecomputers.co.uk

DETAILS www.antec.co.uk

ENERMAX Liberty ELT500AWT

RATING ★★★★★

PRICE £75 inc VAT

SUPPLIER www.candcentral.co.uk

DETAILS www.enermax.co.uk



If you're irritated by the mass of unused power cables in your case, you need a modular power supply. We've got two on test: Antec's Neo HE500 and Enermax's Liberty ELT500AWT.

Both supplies are rated at 500W and support SLI systems, so they're meaty supplies for PCs with lots of components. They're both silent in operation, too. Enermax uses a large 120mm fan, which means it can move a large volume of air at slow speeds, reducing noise. Antec uses a standard 60mm fan, which you'd expect to be louder. However, its power supply is very efficient and creates less heat, so it needs less cooling.

Both supplies are modular, so you connect only the power cables you need. They are shipped with a range of cables: Antec supplies six Molex, two PCI-E and four SATA cables, which connect to five modular ports. If you want a mixture of SATA and Molex, though, you must use more than one cable.

Enermax is more flexible, with six modular ports for six Molex and six SATA ports. It also has two dedicated PCI-E ports. Enermax mixes



Molex and SATA connectors on one cable, so you might even be able to get away with plugging in a single cable.

There's little to tell the two products apart, and either will power your PC silently. But Enermax's ELT500AWT, while a little more expensive, has a wider range of connectors and a more flexible configuration and comes with a neat bag to keep your spare cables organised.

David Ludlow

SPECIFICATIONS Antec: 500W modular power supply, five modular ports, two PCI-E, six Molex, four SATA. Part code 0761345-05506-2. Enermax: 500W modular power supply, eight modular ports, two PCI-E, six Molex, six SATA. Part code ELT500AWT

HOTLIST PROCESSOR

AMD Athlon 64 3200+

RATING ★★★★★

PRICE £129 inc VAT

SUPPLIER www.savastore.com

DETAILS www.amd.com



AMD's Athlon 64 3200+ is a powerful and relatively cheap processor, and did well in all our benchmarks. It should appeal to overclockers, too, because AMD processors are easy to tweak. The Athlon 64 3200+ is also an excellent choice for games and should help your PC muster a few more frames per second.



SPECIFICATIONS 2.6GHz processor, Socket 939, 200MHz external bus, two 1,000MHz HyperTransport, 128KB L2 cache, 512KB L1 cache. Part code ADA3200BPBOX

HOTLIST PROCESSOR

INTEL Pentium 4 640

RATING ★★★★★

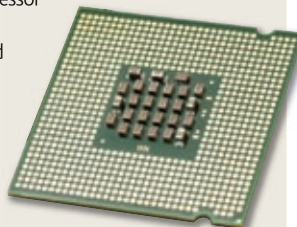
PRICE £160 inc VAT

SUPPLIER www.dabs.com

DETAILS www.intel.com



Intel's 640 processor supports 64-bit instructions and has a massive 2MB of L1 cache. The Pentium 4 640 is a high-performance chip that provides enough power to cope with any application. It did well in our benchmarks and is good value, too.



SPECIFICATIONS 3.26GHz processor, LGA775, 800MHz external bus, 16KB L2 cache, 2,048KB L1 cache. Part code BX80547PG3200F

HOTLIST PROCESSOR

INTEL Celeron D 346

RATING ★★★★★

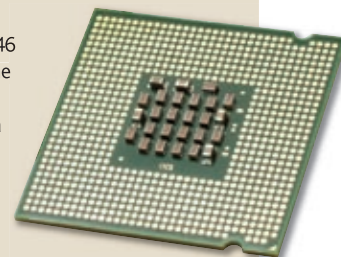
PRICE £77 inc VAT

SUPPLIER www.dabs.com

DETAILS www.intel.com



Intel's Celeron D 346 might be part of the company's budget range, but it's still a good performer. It supports 64-bit instructions, which will be useful when more 64-bit applications are available. It does well with current software, too. It's a powerful budget processor with enough processing power for video editing.



SPECIFICATIONS 3.06GHz processor, LGA775, 533MHz external bus, 16KB L2 cache, 256KB L1 cache. Part code BX80547RE3066CN


REVIEW GRAPHICS CARD

LEADTEK

WinFast 7800GTX TDH

RATING ★★★★★

PRICE £350 inc VAT

SUPPLIER www.fastekcomputers.co.uk
DETAILS www.leadtek.co.uk

Leadtek's 7800GTX TDH looks exactly the way a powerful graphics card should: big and heavy. The long, double-slot card has a huge heat sink covering its underside with a single fan placed in the middle. It's not particularly loud, but you'll need a fairly large case to accommodate it.

The reason this card needs more cooling than other nVidia GeForce 7800GTX-based cards we've seen is that the TDH runs a lot faster. It has 256MB of GDDR3 memory running at 600MHz (1.2GHz effective) and a core speed of 430MHz;



the standard specification for a 7800GTX is 500MHz (1GHz effective) memory and a core speed of 400MHz.

Performance was awe-inspiring: the 7800GTX TDH managed an amazing 17,110 in our 3DMark03 benchmark. This card is most impressive at higher resolutions, though, scoring 7,242 at 1,600x1,200 with 4x FSAA turned on. Its performance in Doom 3 was just as good, with a score of 57.1fps at 1,600x1,200. This card is almost 10 per cent faster than a standard 7800GTX.

There's little the TDH can't handle, but you can use SLI if you want – and can afford – a second graphics card. Dual DVI-I and TV out (component, composite and S-video) outputs are provided. Leadtek throws in a good software bundle, which includes Prince of Persia: Warrior Within and Splinter Cell: Chaos Theory.

Surprisingly, the card is around the same price as standard 7800GTXs from other manufacturers, but this is still expensive. If you're after the fastest card, look no further, but those who are looking for speed and value should stick with the 7800GT.

David Ludlow

✓ **Fast; excellent performance**

✗ **Big; expensive**

SPECIFICATIONS nVidia GeForce 7800GTX graphics processor, 256MB GDDR3 memory running at 600MHz (1.2GHz effective), 430MHz core speed, 24 pixel pipelines, two DVI-I, TV out. **Part code** 6075720302

REVIEW GRAPHICS CARD

SAPPHIRE

X1300

RATING ★★★★★

PRICE £78 inc VAT

SUPPLIER www.microdirect.co.uk
DETAILS www.sapphiretech.com


The X1300 is at the bottom end of ATI's new range of graphics cards and is available in both 256MB and 512MB versions. We tried the 256MB X1300.

This card has no fan. Instead a large heat sink covers the graphics processor. The card takes up a single PCI-E slot, so it's easy to install in a small case. The heat sink gets very hot, though, so you'll need good airflow in your case.

The X1300 has the usual outputs, including DVI-I, D-sub and TV out (composite, component and S-video), so it's ideal for a media PC. It also has four pixel pipelines, 256MB of DDR2 RAM running at 500MHz and a core speed of 450MHz. These are impressive specs, but the number of pixel pipelines seems to hold the card back. It scored 4,189 in 3DMark03 at 1,024x768, and just 18fps in Doom 3.

Turning off anti-aliasing and setting Doom 3 to medium detail resulted in a better score of 31.1fps, similar to that of nVidia's 6600. It can't handle games at high resolutions, but it copes better with less demanding titles such as strategy games.

The X1300 is similar in price to silent nVidia GeForce 6600 graphics cards, but it fits in a wider range of cases. If you want a basic card for a media PC and have a well-ventilated case, it's a good buy.

David Ludlow

✓ **Passively cooled; good range of outputs**

✗ **Gets very hot, so you'll need good cooling**

SPECIFICATIONS ATI Radeon X1300 graphics processor, 256MB DDR2 memory running at 500MHz (1GHz effective), four pixel pipelines, PCI-E x16, DVI-I, D-sub and TV out. **Part code** VIDSAPRX13256TD

HOTLIST GRAPHICS CARD

GIGABYTE

GeForce 7800 GT

RATING ★★★★★

PRICE £260 inc VAT

SUPPLIER www.dabs.com
DETAILS www.gigabyte.com.tw


The 7800 GT might be the baby of nVidia's new graphics card range, but it's far from being a weak performer. In fact, with scores of 14,601 in 3DMark03 and an impressive 86.5fps in Doom 3 at a resolution of 1,600x1,200 it is an excellent card.

Available for £100 less than the 7800 GTX, but only a few per cent slower, Gigabyte's 7800 GT is the performance card to buy.



SPECIFICATIONS GeForce 7800 GT, 400MHz core, 256MB GDDR3 (1GHz effective), 20 pixel-pipelines, PCI-E x16 interface. **Part code** GV-NX781256V-B

HOTLIST BAREBONES CASE

BIOSTAR

iDEQ 330P

RATING ★★★★★

PRICE £229 inc VAT

SUPPLIER www.shooboxcomputers.com
DETAILS www.biostar.com.tw

Biostar's iDEQ 330P uses the same principles as Intel's BTX design, but applies it to Socket 939 AMD processors. A redesigned motherboard means that a single fan is all that's needed to cool the processor and motherboard.

The case is very well designed and opens like a car bonnet. It achieved good scores in our performance tests.



SPECIFICATIONS nVidia nForce 4 chipset, supports AMD Socket 939 processors, two DIMM slots, one PCI, one PCI-E x16, one PCI-E x1 slot, one 5¼" drive bay, two 3½" drive bays, 7-in-1 memory card reader, three USB2, one Gigabit Ethernet, two FireWire ports, eight-channel audio. **Part code** BARBIO1DQ330P

HOTLIST MOTHERBOARD

ECS

KN1 SLI Extreme

RATING ★★★★★

PRICE £77 inc VAT

SUPPLIER www.pcnextday.co.uk
DETAILS www.ecs.uk.com


ECS's KN1 SLI Extreme motherboard uses nVidia's nForce 4 SLI chipset, so you can use two graphics cards together. It also supports all Socket 939 Athlon 64 processors – ideal as the basis of a powerful computer.

Performance is excellent, and the motherboard has every port you could possibly want. For the price, this is excellent value.



SPECIFICATIONS nForce 4 SLI chipset, supports AMD Socket 939 processors, three PCI, one PCI-E x16, one PCI-E x1, four DIMM slots, two Gigabit Ethernet, ECS Top Hat Flash, three IDE, six SATA2, four USB2, FireWire. **Part code** KN1 SLI



REVIEW BAREBONES SYSTEM

SHUTTLE
XPC SD11G5

RATING ★★★★★

PRICE £340 inc VAT

SUPPLIER www.microdirect.co.ukDETAILS www.shuttle.com

While you can quieten most PCs, it's easier to start from scratch using low-power components.

Shuttle's XPC SD11G5 is an excellent starting point.

It looks like a standard XPC, but it's got a Socket 479 Intel i915-based motherboard, which takes a Pentium M processor. Unlike its big brother, the Pentium 4, the Pentium M is efficient, cool and needs far less power.

Shuttle cools the processor using a heat sink and heat pipe that leads up to a single 80mm fan. Unlike the fan on other Shuttle boxes, though, this one runs very quietly. In fact, when the PC is turned on you'd be hard pressed to hear anything. Only when you put your ear extremely close to the vent can you hear the slightest whistle of moving air. It's all helped by the 270W external power supply.

You may worry about the level of performance you can expect from a mobile processor, but there's no need. Shuttle uses Intel's i915 chipset, which supports DDR2 RAM in a dual-channel configuration. We tested using 1GB of matched memory and a 2GHz Pentium M 755 processor, which costs around £150 including VAT. Its score of 108 in our application benchmarks shows that it's a

powerful combination that can run all your office tasks and handle photo and video editing too.

The onboard Intel graphics are as poor as you'd expect and won't run the latest games, but there's a PCI-E x16 slot free, so you can install a much better graphics card. This leaves a free PCI-E x1 slot and a mini PCI slot, so you can add a notebook-style wireless adaptor for around £40.

With the usual range of front- and rear-mounted ports and Shuttle's excellent instructions, the SD11G5 is an attractive barebones case that's ideal for anyone wishing to build a silent computer. However, it is a little expensive.

David Ludlow

✓ High build quality; silent; takes a Pentium M processor

✗ Expensive; no PCI slots

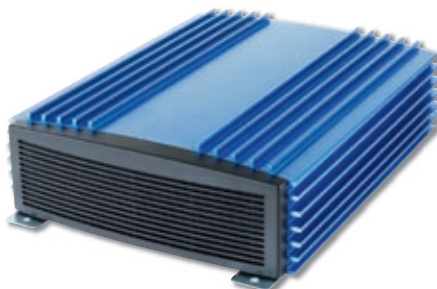
SPECIFICATIONS Intel i915 chipset, takes Socket 479 Pentium M processors, two DDR2 RAM slots, two SATA ports, one IDE port, network, four USB2 ports, one FireWire, mini PCI, PCI-E x1 slot, PCI-E x16 slot, 7.1 audio, 270W external power supply. **Part code** SD11G5

REVIEW CAR PC CASE

VIA
VoomPC

RATING ★★★★★

PRICE £53 inc VAT

SUPPLIER www.cartft.comDETAILS www.via.com

PCs are available for the living room, the office and for use on the move, so why not the car? VIA has created its VoomPC case for that very purpose. We review the case here, but turn to *PC Builder* on page 264 to find out how to install it in your car, complete with a touch-screen LCD.

The blue metal case looks great, feels tough and is well made. It's also tiny, so you'll need a Mini-ITX motherboard, such as VIA's EPIA M-II 1200 (£134 including VAT), which we were given for this review. The board includes a 1.2GHz VIA Nehemiah C3 processor, which is cooled by a 40mm fan.

The case takes two 2½" hard disks, but these screw in under the motherboard. This makes them hard to replace, as you have to take the PC apart.

Assembly is very easy thanks to the motherboard's integrated components: you simply screw the board into place. For installation you can connect an external power supply, but once it's working you'll need VIA's M1-ATX 6-24V DC/DC power supply, which is £47 including VAT. This 90W model connects to a 12V car power supply and can be configured to power the PC on and off automatically with the car's ignition.

You have to be careful when sliding the case back on, as it's easy to trap wires in the mounting or, worse, push them into the processor's fan. Better cable management and fan guards would be a good idea with this case. If you prefer, you can buy the kit preassembled, but it's a bit more expensive.

Performance isn't great. Its score of 22 in our application benchmarks is poor, but it's fine for browsing the net and playing MP3s. The onboard graphics can't handle games, but they support hardware MPEG2 decoding, so you can play DVDs.

The VoomPC is an affordable, intelligently designed case, but better cable management would have been preferable, as would a barebones version that contained everything you need.

David Ludlow

✓ Small; sturdy; good value

✗ Only supplied as a case; cables are easily trapped

SPECIFICATIONS Car PC housing, takes Mini-ITX motherboard and 12V power supply. **Part code** VoomPC

CHOOSING A...
BAREBONES
SYSTEM

Follow our step-by-step guide to buying the perfect barebones system for your needs

1 Buying a barebones system is a simple way of building your own PC, as the motherboard is already installed and you get all the cables you need to finish building your PC. All you have to buy is a processor, a hard disk and possibly a graphics card. A barebones system that supports up to a 3.4GHz Pentium 4 and a single hard disk should set you back around £200.

2 As the motherboard is built in, you need to decide which type of processor you want to buy before you choose your barebones case. If you want Intel support, an LGA775-based barebones system will do the trick; for an AMD processor, look for a Socket 939-based system.

3 Do you want to play games? If you just want a basic computer for office tasks, then onboard graphics will save you money. If you want the option to upgrade to a dedicated graphics card, look for a system that comes with a PCI-E x16 slot.

4 If you want to be able to install a wireless card or TV card, you'll need a system with expansion slots. For now, make sure you get at least one PCI slot. PCI-E x1 slots are not as well supported and you'll have trouble buying a card for them. Also look for a good number of USB2 ports, so you can add external peripherals, and extras, such as a built-in memory card reader.

5 How much storage do you want? Some barebones systems support two or even three hard disks, but many have room for just one. Buy according to the number of disks you want to install. Make sure you've got one 5¼" drive bay, so you can install a DVD drive. Some barebones systems come with an optical drive installed, but this is unusual.

FILL IN YOUR SPECS HERE

(Recommended minimum in grey)

PROCESSOR SOCKET: Intel LGA775

HARD DISK SUPPORT: One SATA

EXPANSION SLOTS: One PCI

GRAPHICS: Onboard

EXTRAS: Memory card reader